**Living Kingdoms**



The study of plants is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The main groups within the plant kingdom are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plants and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Vascular Plants**

All vascular plants contain **vascular** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - cylindrical arrangements of transport cells that carry \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ around the plant. Most plants are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plants and can be further classified into the classes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



**# 1 Angiosperms (flowering plants)**

Angiosperms are by far the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ class of vascular plant.

They produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The flowers of angiosperms can range from large, brightly coloured blooms to small, inconspicuous ones that don’t really look like flowers at all. They develop \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inside the flower, the part that later becomes the fruit or nut. These fruits will eventually fall or be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by birds or animals. These seeds will be ready to produce a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plant when the fruit rots or when they are passed as part of bird or animal poo.

**# 2 Conifers**

Conifers do not normally occur naturally in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and generally prefer the cooler climates of Europe, northern Asia and North America. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trees are an example of conifers. Conifers do \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ produce seeds in fruit like the angiosperms. They produce their seeds on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a woody cone.





**# 3 Cycads**

Unlike conifers, cycads thrive in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ environments. Some Australian versions look a little like palm trees, which is a bit misleading because palm trees are actually \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Cycads produce seeds in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**# 4 Ginkgo**

There is only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ member in this class! *Ginkgo biloba* is a native plant of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. *Ginkgo biloba* is now cultivated throughout the world and sold as a natural cure for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ problems. *Ginkgo biloba* produces its seeds in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and unlike the other cone-bearing plants, loses its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in winter.



[](http://www.irishviews.com/fern2.jpg)

**# 5 Ferns**

Ferns have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ seeds and instead reproduce through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The spore cases grow on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. When they are ready, the cases \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ open and release their spores. These can start \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plants if they land in a good place for growth.

**Bryophytes**

The bryophytes include \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are generally quite small and don’t have a well-developed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ system or true \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are found in moist, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ places.

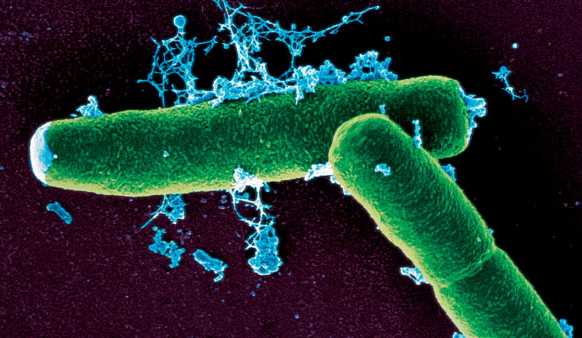


The fungi are a large group and include \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, toadstools and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Some are very useful. Some mushrooms are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and the mould \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gives us the valuable antibiotic penicillin. Fungi are not capable of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and so cannot make their own food. Like animals, they are heterotrophs – they must \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on plants and animals to survive. They reproduce by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

[](http://danny.oz.au/travel/iceland/p/3571-fungi.jpg)

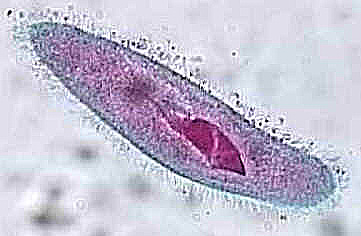


A more scientific word for germs is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Bacteria belong to the kingdom \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Bacteria are everywhere: in the soil, on your skin, up your nose and in your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is full of bacteria! Bacteria can be helpful or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Although the bacteria in your intestines help to digest your food, they also produce excess gas that needs to exit as a belch or a fart. Other bacteria are used to make foods like yoghurt and cheese and drinks like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Some bacteria rot food and others cause infection and serious illness. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ phlegm that you might cough up when you have a cold, many tummy problems and pus are all infections caused by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.





This is the kingdom where living things are placed if they do \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fit anywhere else. Protists always live in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and can be further classified as either \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



**Answers**



The study of plants is called **botany** The main groups within the plant kingdom are the **vascular** plants and **bryophytes**.

**Vascular Plants**

All vascular plants contain **vascular** **bundles** - cylindrical arrangements of transport cells that carry **liquids** and **nutrients** around the plant. Most plants are **vascular** plants and can be further classified into the classes **angiosperms** , **conifers** , **cycads** , **ginkgos** and **ferns**.



**# 1 Angiosperms (flowering plants)**

Angiosperms are by far the **largest** class of vascular plant.

They produce **flowers**. The flowers of angiosperms can range from large, brightly coloured blooms to small, inconspicuous ones that don’t really look like flowers at all. They develop **seeds** inside the flower, the part that later becomes the fruit or nut. These fruits will eventually fall or be **eaten** by birds or animals. These seeds will be ready to produce a **new** plant when the fruit rots or when they are passed as part of bird or animal poo.



**# 2 Conifers**

Conifers do not normally occur naturally in **Australia** and generally prefer the cooler climates of Europe, northern Asia and North America. **Pine** trees are an example of conifers. Conifers do **not** produce seeds in fruit like the angiosperms. They produce their seeds on the **scales** of a woody cone.

**# 3 Cycads**

Unlike conifers, cycads thrive in **tropical** environments. Some Australian versions look a little like palm trees, which is a bit misleading because palm trees are actually **angiosperms**. Cycads produce seeds in **cones**.



**# 4 Ginkgo**

There is only **one** member in this class! *Ginkgo biloba* is a native plant of **China**. *Ginkgo biloba* is now cultivated throughout the world and sold as a natural cure for **circulatory** problems. *Ginkgo biloba* produces its seeds in **cones** and unlike the other cone-bearing plants, loses its **leaves** in winter.



**# 5 Ferns**

Ferns have **no** seeds and instead reproduce through **spores**. The spore cases grow on the **leaves**. When they are ready, the cases **burst** open and release their spores. These can start **new** plants if they land in a good place for growth.

[](http://www.irishviews.com/fern2.jpg)

**Bryophytes**

The bryophytes include **liverworts** and **mosses**. They are generally quite small and don’t have a well-developed **vascular** system or true **roots**. They are found in moist, **cool** places.

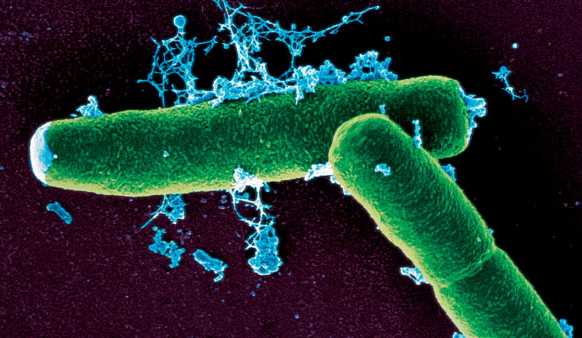


The fungi are a large group and include **mushrooms**, toadstools and **moulds**. Some are very useful. Some mushrooms are **edible**, and the mould **penicillum** gives us the valuable antibiotic penicillin. Fungi are not capable of **photosynthesis** and so cannot make their own food. Like animals, they are heterotrophs – they must **feed** on plants and animals to survive. They reproduce by **spores**.

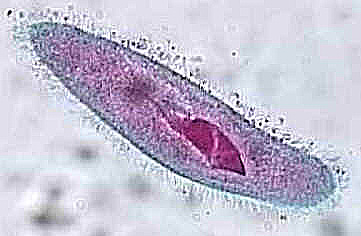
[](http://danny.oz.au/travel/iceland/p/3571-fungi.jpg)



A more scientific word for germs is **bacteria**. Bacteria belong to the kingdom **Monera**. Bacteria are everywhere: in the soil, on your skin, up your nose and in your **intestines**. Your **poo** is full of bacteria! Bacteria can be helpful or **harmful**. Although the bacteria in your intestines help to digest your food, they also produce excess gas that needs to exit as a belch or a fart. Other bacteria are used to make foods like yoghurt and cheese and drinks like **Yakult**. Some bacteria rot food and others cause infection and serious illness. The **green** phlegm that you might cough up when you have a cold, many tummy problems and pus are all infections caused by **bacteria**.







This is the kingdom where living things are placed if they do **not** fit anywhere else. Protists always live in **water** and can be further classified as either **algae** or **protozoa**.